

REMARKS

Claims 1-29 are pending in the application. The Examiner has rejected Claims 21-24 under 35 U.S.C. §112, second paragraph. The Examiner has rejected Claims 7, 8 and 11-13 under 35 U.S.C. §102(e) as being anticipated by Gilhousen (U.S. Patent 5,751,761). The Examiner has rejected Claims 9, 10 and 14-16 under 35 U.S.C. §103(a) as being unpatentable over Gilhousen in view of Kumar et al. (U.S. Patent 6,418,148). The Examiner has rejected Claims 1-6 and 17-29 under 35 U.S.C. §103(a) as being unpatentable over Gilhousen in view of Kumar et al. and Tiedemann, Jr. et al (U.S. Patent 6,335,922).

Regarding the rejection of Claim 21-24 under §112, second paragraph, the Examiner states that the element “the circuit data” in Claim 21, line 11, lacks antecedent basis. Claim 21 has been amended to read “~~the~~ circuit data”, as recommended by the Examiner. Based on at least the foregoing, withdrawal of the rejection of Claims 21-24 is respectfully requested.

First, a feature of Gilhousen, in which unavailable codes are sorted by currently assigned codes, is already disclosed in the related art of the present application. That is, an object of the present invention is to provide a method for not merely sorting the unavailable codes by the currently assigned codes, *but making it is possible to use the unavailable codes.*

The cited references disclose that priority is given to circuit data, but do not disclose that an available code for packet data is searched during a period in which circuit data is not being transmitted during discontinuous transmission. That is, the cited references assign a data rate assigned to the circuit data and a code maintaining the orthogonality to the packet data, *when the circuit data and the packet data are simultaneously transmitted.* However, the present invention assigns the data rate assigned to the circuit data and the code maintaining the orthogonality to the packet data *when the circuit data is not transmitted.*

Referring to the conventional art, unavailable Walsh codes are determined when a base station determines a maximum data rate. A set of the unavailable Walsh codes is indicated as a

Walsh pool. At this point, it should be noted that a user does not always communicate at the maximum data rate. Therefore, there are Walsh codes available for other channels among the Walsh codes of the Walsh pool assigned to a specific channel when communication is performed at a data rate lower than the maximum data rate. However, in the conventional art, all Walsh codes of the Walsh pool are not used when the communication is performed at the data rate lower than the maximum data rate. This wastes the Walsh codes. To solve this problem, the present invention provides a method for using Walsh codes available even when the communication is not performed at the maximum data rate.

Because the communication, which is not performed at the maximum data rate, occurs discontinuously, the Walsh codes of the Walsh pool cannot be used for data transmission in real time such as circuit data that should be transmitted without delay. Therefore, the present invention provides a method for using the Walsh codes of the Walsh pool for data transmission such as packet data in which a delay is allowed when the communication is performed at the data rate lower than the maximum data rate.

Regarding the rejection of independent Claim 1 under §103(a), the Examiner states that Gilhousen in view of Kumar et al. and Tiedemann, Jr. et al. discloses all of the elements of the claim. Gilhousen discloses a system and method for orthogonal spread spectrum sequence generation in variable data rate systems.

The Examiner relies on the “BUSY” list disclosed in col. 12, lines 20-40 of Gilhousen to reject the element of Claim 1 that recites “a memory for storing orthogonal code numbers which cannot maintain an orthogonality due to an orthogonal code which a circuit data user uses at a maximum data rate”. The busy list of Gilhousen stores “every possible Walsh code.” The busy list is then cleared when a code is requested (i.e. codes are unmarked, but all codes are still listed in the busy list). All codes currently assigned are then marked as busy in the busy list (i.e. some or all of the codes stored in the busy list are marked as busy). Then all codes that are recursively related to the codes indicated as busy are also marked as busy (i.e. currently assigned and recursively related codes are marked as busy). At this point the busy list of Gilhousen contains a list of all possible codes with

codes that are assigned or recursively related to the assigned codes marked as busy. The busy list of Gilhousen does not contain only codes that cannot maintain orthogonality, but the busy list of Gilhousen contains “every possible Walsh code.” Based on at least the foregoing, withdrawal of the rejection of Claim 1 is respectfully requested.

Further, Claim 1 recites that when a code for packet data is required, when circuit data is being transmitted, a code *that cannot maintain orthogonality* is selected from the memory and used for the packet data. Gilhousen discloses that the busy list is searched *for an available code* (i.e. a code *NOT* marked as busy in the busy list). These are clearly distinguishing elements. The present application uses a code that cannot maintain orthogonality, whereas Gilhousen uses a code that must be orthogonal based on its structure. Based on at least the foregoing, withdrawal of the rejection of Claim 1 is respectfully requested.

As independent Claims 17, 21 and 27 were rejected under the same theories as Claim 1 and since Claims 17, 21 and 27 recite elements similar to those discussed above with respect to Claim 1, based on similar arguments, withdrawal of the rejection of Claims 17, 21 and 27 is respectfully requested.

Regarding the rejection of independent Claim 7 under §102(e), the Examiner states that Gilhousen discloses all of the elements of the claim. Claim 7 recites that orthogonal code numbers that cannot maintain orthogonality are stored in a storage medium. As discussed above with respect to Claim 1, the busy list of Gilhousen stores “every possible Walsh code”. Further, Claim 7 recites a controller for determining whether the respective orthogonal code numbers stored in the storage medium are available at a given data rate for a data user. That is, the apparatus of Claim 7 searches for a code for the data user from the codes *that cannot maintain orthogonality*, whereas Gilhousen searches for *an available code* (i.e. a code *NOT* marked as busy in the busy list). Based on at least the foregoing, withdrawal of the rejection of Claim 7 is respectfully requested.

Regarding the rejection of independent Claim 12 under §102(e), the Examiner states that Gilhousen discloses all of the elements of the claim. Claim 12 recites a memory for storing the

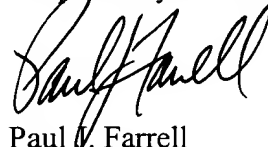
orthogonal code numbers generated from the Walsh pool generator and an orthogonal code number used at the maximum data rate. As discussed above with respect to Claims 1 and 7, the busy list of Gilhousen stores “every possible Walsh code”. Further, Claim 12 recites a controller for determining whether the respective orthogonal code numbers stored in the memory are available at a given data rate for a data user. That is, the apparatus of Claim 12 also searches for a code for the data user from the codes *that cannot maintain orthogonality*, whereas Gilhousen searches for *an available code* (i.e. a code *NOT* marked as busy in the busy list). Based on at least the foregoing, withdrawal of the rejection of Claim 12 is respectfully requested.

Regarding the rejection of Claim 25, the Examiner states that Gilhousen in view of Kumar et al. and Tiedemann, Jr. et al. discloses all of the elements of the claim. Claim 25 recites “generating orthogonal code numbers which cannot maintain an orthogonality due to an orthogonal code used at the maximum data rate, *by sequentially adding multiples of the received orthogonal code length to the received orthogonal number*”. As this element has not been specifically rejected in the Office Action, the Examiner has not provided a proper rejection, and at this point in time Claim 25 should be allowable based on the fact that it has yet to be properly rejected. Based on at least the foregoing, withdrawal of the rejection of Claims 25 is respectfully requested.

Independent Claims 1, 7, 12, 17, 21, 25 and 27 are believed to be in condition for allowance. Without conceding the patentability per se of dependent Claims 2-6, 8-11, 13-16, 18-20, 22-24, 26, 28 and 29, these are likewise believed to be allowable by virtue of their dependence on their respective amended independent claims. Accordingly, reconsideration and withdrawal of the rejections of dependent Claims 2-6, 8-11, 13-16, 18-20, 22-24, 26, 28 and 29 is respectfully requested.

Accordingly, all of the claims pending in the Application, namely, Claims 1-29, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Paul V. Farrell", written over the typed name.

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